Abstract

Ultrasound usually detects hydronephrosis in adult and children, while nuclear medicine techniques quantify relative renal function in addition to characterizing the uro-dynamic relevance of hydronephrosis. This prospective study was undertaken to examine the relationship between ultrasound morphological findings and relative renal function, quantified with dynamic 99mTechnetium mercaptotriacetylglycine imaging (99mTcMAG3). Fifty patients with hydronephrosis were enrolled in this study in the period from February 2015 to September 2015 in Mafraq Hospital- Abu Dhabi – UAE. The result of this study showed that the maximum uptake value occurs as the uptake time increases i.e. 11counts/min, the average of maximum uptake was 620.7±378 counts with a mean time scanning 13.8±9.4 min. the mean kidney size, kidney pelvic size and cortical thickness was 27.5±17.4, 0.5±0.2 and 6.7±5.5 respectively; these measured correlated well with the kidney function in the presence of hydronephrosis condition and body characteristics as well. In conclusion Kidney function can be estimated using kidney size where max uptake increase by 10.3 counts/cm2 of the kidney size and the uptake time increases by 0.1 min/cm2 of the kidney size.

الخلاصه

الموجات فوق الصوتية غالبا تكتشف استسقاء الكلية في الكبار والأطفال، في حين أن تقنيات الطب النووي تحدد وظيفة الكلى النسبية بالإضافة إلى تمييز أهمية ديناميكية الكلية نسبة لاستسقاء الكلية. أجريت هذه الدراسة الانية لدراسة العلاقة بين النتائج المورفولوجية للموجات فوق الصوتية ووظيفة الكلى النسبية، التى تم تحديدها كميا بديناميكية التصوير تكنيشيوم 99. أجريت هذه الدراسة على خمسين مريض يعانون من استسقاء الكلية في الفترة من فبراير 2015 إلى سبتمبر 2015 في مستشفى المفرق - أبوظبي بالإمارات العربية المتحدة. أظهرت نتائج هذه الدراسة أن حدوث قيمة امتصاص أقصى يزيد بزيادة الوقت ، أي 11 عدد في دقيقة، وكان متوسط الحد الأقصى للامتصاص 620.7 ± 378 عدد مع متوسط وقت المسح 13.8 ± 9.4 دقيقة. كان متوسط حجم الكلى و حوض الكلى وسمك القشرية 27.5 ± 17.4، 0.5 ± 0.2 و 6.7 ± 5.5 على التوالي. هذه القياسات ترتبط بشكل جيد مع وظائف الكلى في وجود حالة الاستسقاء وخصائص الجسم كذلك. في الختام يمكن تقدير وظيفة الكلى باستخدام حجم الكلى حيث أقصى زيادة امتصاص تزيد ب 10.3 عدد بالنسبة للسم 2 من حجم الكلى ويزيد وقت الامتصاص بنسبة 0.1 دقيقة بالنسبة للسم 2 من حجم الكلى.

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List of contents

Chapter three

Chapter four

Chapter five